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EXAMINER

PRINCE, FRED G

ART UNIT	PAPER NUMBER
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1724

DATE MAILED: 07/31/2002

76

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/446,581

Applicant(s)

ALVAREZ ET AL.

Examiner

Fred G. Prince

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on May 31, 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) 1-18, 34-37 and 42-58 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 46-58 is/are allowed.
- 6) ☐ Claim(s) 1-8, 13-18, 34-37 and 42-45 is/are rejected.
- 7) ☐ Claim(s) 9-12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 14.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Specification*

1. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2, 5-8, 13-18, 36-37, and 56 are rejected under 35 U.S.C. 102(b) as being anticipated by Asahi (JP 52-130150).

Asahi, directed toward a device comprising iron and hydrogenotrophic bacteria, teaches a device having powdered iron compounds and *Pseudomonas* or *Micrococcus* species bacteria supported on a resin support (page 4), wherein the device is contained in a packed-column bioreactor for treating sulfate-containing water (Figure; page 6), wherein the solution inherently is selected since the solution must be placed into the device for treatment.

4. Claims 1, 5-8, 13-18, 34-35, and 56 are rejected under 35 U.S.C. 102(b) as being anticipated by Kanatsuki (JP 2-119992).

Kanatsuki, directed toward a device comprising iron and hydrogenotrophic bacteria, teaches a device having pellet iron compounds (page 6) and hydrogenotrophic

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bacteria supported on a zeolite support (page 7), wherein the device may be used in a packed-column bioreactor for treating water (Figure 4) for *ex situ* remediation, wherein the solution inherently is selected since the solution must be placed into the device for treatment.

5. Claims 1, 5-7, 42-45, and 56 are rejected under 35 U.S.C. 102(b) as being anticipated by Weathers et al. (submitted by applicant as Reference C39).

Weathers et al., directed toward a device comprising iron and hydrogenotrophic bacteria, teach a device having zero-valence iron in the form of steel wool and hydrogenotrophic bacteria, wherein the device may be used to degrade halocarbons including carbon tetrachloride and wherein the solution inherently is selected since the solution must be placed into the device for treatment.

6. Claims 1-3, 5-8, 13-18, 35, 42-45, and 56 are rejected under 35 U.S.C. 102(b) as being anticipated by Weathers (submitted by applicant as Reference C38).

Weathers, directed toward a device comprising iron and hydrogenotrophic bacteria, teach a device having powdered zero-valence iron (page 14) or steel wool (page 181) and *Pseudomonas* or *Micrococcus* species hydrogenotrophic bacteria (Table 2.1), wherein the device may be used to degrade halocarbons including carbon tetrachloride (page 182) and wherein the solution inherently is selected since the solution must be placed into the device for treatment.

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***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weathers in view of Semp et al.

Weathers is described above. Weathers does not disclose using one of the specified bacteria.

Semp et al. disclose using *Paraccocus denitrificans* ATCC 19367 in order to reduce nitrates (col. 4, lines 60-68).

It would have been obvious for the skilled artisan to have modified the device of Weathers such that it comprises *Paraccocus denitrificans* ATCC 19367 in order reduce nitrates in the water, as suggested by Semp et al.

***Allowable Subject Matter***

9. Claims 46-58 are allowed.

10. Claims 9-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Per claims 9-12, while claim 1 is not patentable for the reasons provided above, in the examiner's opinion, the prior art fails to teach or fairly suggest providing the

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device in an environmental site and defining the device as an in situ reactive barrier. Placing the device in an environmental site or defining the device as an in situ reactive barrier has the benefit of treating the contaminated site without having to remove or transport the contaminants prior to treatment.

Per claims 46-50, while it is known in the art to treat haloaliphatic compounds with hydrogenotrophic bacteria and a zero-valence iron, in the examiner's opinion, the prior art fails to teach or fairly suggest treating haloaromatics or a pesticide.

Per claims 51-53, 57 and 58, while it is known in the art to treat haloaliphatic compounds with hydrogenotrophic bacteria and a zero-valence iron, in the examiner's opinion, the prior art fails to teach or fairly suggest treating metal-containing compounds.

Per claims 54-55, while it is known in the art to treat haloaliphatic compounds with hydrogenotrophic bacteria and a zero-valence iron, in the examiner's opinion, the prior art fails to teach or fairly suggest treating sulfite- or sulfate-containing compounds.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References are cited of interest to show the state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred G. Prince whose telephone number is (703) 306-9169. The examiner can normally be reached on Monday-Thursday, 6:30-4:00; alt. Fridays 6:30-3:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Simmons can be reached on (703) 308-1972. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

*Fred Prince*  
Fred Prince  
Patent Examiner  
Art Unit 1724  
July 12, 2002